

AD-A079 965

FOREIGN TECHNOLOGY DIV WRIGHT-PATTERSON AFB OH  
ELECTRICAL INSULATING IMPREGNATING VARNISH GF-95.(U)  
AUG 79  
FTD-ID(RS)T-0903-79

F/G 11/3

UNCLASSIFIED

NL

1 OF 1

2-1-80



END

DATE

FILED

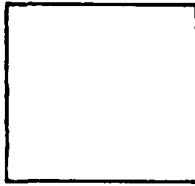
2-80

DDC

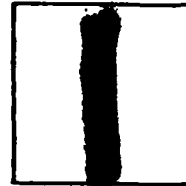
PHOTOGRAPH THIS SHEET

ADA 079965

DTIC ACCESSION NUMBER



LEVEL



INVENTORY

FTD-ID(RS)T-0903-79

DOCUMENT IDENTIFICATION

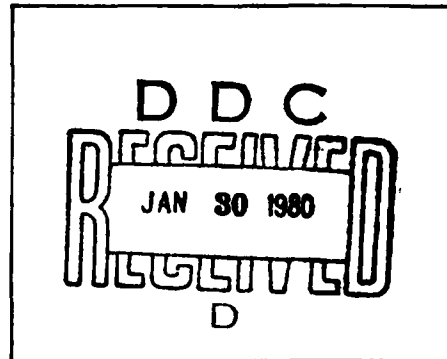
**DISTRIBUTION STATEMENT A**

Approved for public release;  
Distribution Unlimited

DISTRIBUTION STATEMENT

ACCESSION FOR	
NTIS	GRA&I
DTIC	TAB
UNANNOUNCED	
JUSTIFICATION	
BY	
DISTRIBUTION /	
AVAILABILITY CODES	
DIST	AVAIL AND/OR SPECIAL
A	

DISTRIBUTION STAMP



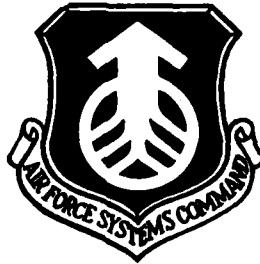
DATE ACCESSIONED

79 12 4 072

DATE RECEIVED IN DTIC

PHOTOGRAPH THIS SHEET AND RETURN TO DTIC-DDA-2

FOREIGN TECHNOLOGY DIVISION



ELECTRICAL INSULATING IMPREGNATING VARNISH GF-95



Approved for public release;  
distribution unlimited.

ADA079965

## EDITED TRANSLATION

FTD-ID(RS)T-0903-79

6 August 1979

MICROFICHE NR: *79D-79-C-001056*

ELECTRICAL INSULATING IMPREGNATING VARNISH GF-95

English pages: 5

Source: GOST 8018-70, Moscow, pp. 1-4

Country of Origin: USSR

Translated by: Randy Dorsey

Requester: AFML/MXA

Approved for public release; distribution unlimited.

THIS TRANSLATION IS A RENDITION OF THE ORIGINAL FOREIGN TEXT WITHOUT ANY ANALYTICAL OR EDITORIAL COMMENT. STATEMENTS OR THEORIES ADVOCATED OR IMPLIED ARE THOSE OF THE SOURCE AND DO NOT NECESSARILY REFLECT THE POSITION OR OPINION OF THE FOREIGN TECHNOLOGY DIVISION.

PREPARED BY:

TRANSLATION DIVISION  
FOREIGN TECHNOLOGY DIVISION  
WP-AFB, OHIO.

FTD -ID(RS)T-0903-79

Date 6 Aug 19 79

# U. S. BOARD ON GEOGRAPHIC NAMES transliteration SYSTEM

Block	Italic	Transliteration	Block	Italic	Transliteration
А а	<i>А а</i>	A, a	Р р	<i>Р р</i>	R, r
Б б	<i>Б б</i>	B, b	С с	<i>С с</i>	S, s
В в	<i>В в</i>	V, v	Т т	<i>Т т</i>	T, t
Г г	<i>Г г</i>	G, g	У у	<i>У у</i>	U, u
Д д	<i>Д д</i>	D, d	Ф ф	<i>Ф ф</i>	F, f
Е е	<i>Е е</i>	Ye, ye; E, e*	Х х	<i>Х х</i>	Kh, kh
Ж ж	<i>Ж ж</i>	Zh, zh	Ц ц	<i>Ц ц</i>	Ts, ts
З з	<i>З з</i>	Z, z	Ч ч	<i>Ч ч</i>	Ch, ch
И и	<i>И и</i>	I, i	Ш ш	<i>Ш ш</i>	Sh, sh
Й й	<i>Й й</i>	Y, y	Щ щ	<i>Щ щ</i>	Shch, snch
К к	<i>К к</i>	K, k	Ъ ъ	<i>Ъ ъ</i>	"
Л л	<i>Л л</i>	L, l	Ы ы	<i>Ы ы</i>	Y, y
М м	<i>М м</i>	M, m	Ь ь	<i>Ь ь</i>	'
Н н	<i>Н н</i>	N, n	Э э	<i>Э э</i>	E, e
О о	<i>О о</i>	O, o	Ю ю	<i>Ю ю</i>	Yu, yu
П п	<i>П п</i>	P, p	Я я	<i>Я я</i>	Ya, ya

\*ye initially, after vowels, and after ъ, ы; e elsewhere.  
When written as ё in Russian, transliterate as yë or ë.

## RUSSIAN AND ENGLISH TRIGONOMETRIC FUNCTIONS

Russian	English	Russian	English	Russian	English
sin	sin	sh	sinh	arc sh	sinh
cos	cos	ch	cosh	arc ch	cosh
tg	tan	th	tanh	arc th	tanh
ctg	cot	cth	coth	arc cth	coth
sec	sec	sch	sech	arc sch	sech
cosec	csc	csch	csch	arc csch	csch

Russian English

rot curl  
lg log

## ELECTRICAL INSULATING IMPREGNATING VARNISH GF-95

GOST 8018-70  
replaces GOST 8018-56

By resolution of the Committee of Standards, Measures, and Measuring Instruments of the Council of Ministers of the USSR on 6 March 1970, No. 293, effective date 1 January 1971

Noncompliance with standards will be punished according to law

This standard covers electrical insulating impregnating varnish GF-95 which is comprised of solutions of glyptal resin modified by dried vegetable oil or a mixture of dried and partially dried vegetable oil and rosin in organic solvents with an additive of melanine formaldehyde resin.

Varnish GF-95 is intended for impregnating windings of electrical machinery, equipment and transformers with an insulation of heat resistance class B.

### 1. Technical specifications

1.1. In regard to physico-chemical and electrical properties, varnish GF-95 must conform to the requirements and standards given in the table.

Names of properties	Standard
1. The presence of mechanical impurities in the varnish	There must not be any
2. The appearance of the varnish film	After drying the varnish must form a glossy, uniform, smooth film
3. Viscosity according to a VZ-4 viscosimeter at 20°C (in seconds)	30 - 50
4. Solid residue content (%), not less than	45
5. Acid number (in mg KOH), not more than	12
6. Drying time at 105-110°C, (in hours), not more than	2
7. Thermoelasticity of the film at 150°C (in hours), not less than	48
8. Hardness of the film according to an impact tester at 20 ± 1°C, not less than	0.40
9. Oil resistance of the film (in kgf), not less than	6
10. Dielectric strength of the film (in kV/mm) not less than:	
at 20 ± 2°C	70
at 120 ± 2°C	40
after exposure to water for 24 hours at 20 ± 2°C	20
11. Specific volumetric electrical resistance of the film (in ohms·cm), not less than:	
at 20 ± 2°C	$1 \cdot 10^{14}$
after exposure to water for 24 hours at 20 ± 2°C	$1 \cdot 10^{12}$

Note: The property of specific volumetric electrical resistance of the film is optional until 1 January 1972, but its determination is mandatory.

1.2. The varnish formula must be approved by the Ministry of the Chemical Industry, USSR and coordinated with the Ministry of the Electrotechnical Industry, USSR and the Ministry of Public Health, USSR.

1.3. During production and use of the varnish, precautionary measures included in pertinent instructions on safety procedures must be observed.

1.4. As required, before use the varnish is diluted to working viscosity with toluene (GOST 14710-69 or GOST 9880-61), xylene (GOST 9949-62 or GOST 9410-60), solvent (GOST 1928-67 or GOST 10214-62), or a mixture of one of these vehicles with mineral spirits (GOST 3134-52) in the ratio of 1:1.

1.5. The finished varnish must be accepted by technical control of the producing plant. The producer must guarantee that the varnish produced conforms to the requirements of these standards. The producing plant is obligated to exchange the varnish without charge for a period of 12 months from the date it was shipped to the user if during this period the user discovers nonconformity of the varnish to the requirements of these standards. The varnish must be exchanged provided the regulations on transporting and storing given in GOST 9980-62 have been observed.

An increase in the viscosity of the varnish during storage does not serve as a reason for rejection if after thinning the varnish conforms to the requirements of these standards in respect to all the other properties.

## 2. Test Methods

2.1. The sample selection and test method rules listed below must be used for quality control inspection by the varnish user as well as to check for the conformity of the container, packaging, and marking to the requirements of these standards.



2.2. The quantity of varnish received as one production run and accompanying one certificate of quality is taken as a batch.

2.3. In checking an incoming batch of varnish, samples are taken according to GOST 9980-62.

2.4. The presence of mechanical impurities is determined according to GOST 13526-68.

2.5. The external appearance of the varnish film is determined visually under natural diffused light. The varnish is applied by pouring onto a clean glass plate measuring 90 x 120 mm. The plate is placed at an angle of  $45^\circ$  in a place protected from dust and is left standing at  $20 \pm 2^\circ\text{C}$  for 15-20 minutes and then baked at  $105-110^\circ\text{C}$  for 2 hours. After cooling the varnish film is inspected.

2.6. The viscosity of the varnish is determined according to GOST 8420-57 by a VZ-4 viscosimeter at  $20^\circ\text{C}$ .

2.7. Solid residue content in the varnish is determined according to GOST 6989-54 at  $130-140^\circ\text{C}$ .

2.8. The acid number of the varnish is determined according to GOST 13526-68.

2.9. Drying time of the varnish film is determined according to GOST 13526-68 on 0.1 mm thick copper strips (GOST 434-53) of the MGM mark. The varnish is applied according to GOST 13526-68. The first layer of the varnish prior to the second dipping and the second layer of the varnish prior to hot drying are allowed to stand at  $20 \pm 2^\circ\text{C}$  for 15-20 minutes. Then the strips with the applied varnish are baked at  $105-110^\circ\text{C}$  for 2 hours.

2.10. The thermoelasticity of the varnish film is determined according to GOST 13526-68 on 0.1 mm thick copper strips (GOST 434-53) of the MGM mark. The varnish is baked according to

paragraph 2.9 of these standards and then the strips are allowed to stand in a thermostat at 150° for 48 hours. The specimens are removed from the thermostat, cooled to  $20 \pm 2^{\circ}\text{C}$  in one hour, and are tested according to GOST 6806-53 around a rod 3 mm in diameter.

2.11. The hardness of the film is determined according to GOST 5233-67 on a type M-3 or ME-3 impact tester. The varnish is applied according to GOST 13526-68, is allowed to stand at  $20 \pm 2^{\circ}\text{C}$  for 15-20 minutes, and baked at 105-110°C for 6 hours.

2.12. The oil resistance of the varnish film is determined according to GOST 13526-68 on copper strips according to paragraph 2.9 and the specimens are baked according to paragraph 2.11 of these standards.

2.13. The dielectric strength and the specific volumetric electrical resistance at  $20 \pm 2^{\circ}\text{C}$  after exposure to water and the dielectric strength at  $120 \pm 2^{\circ}\text{C}$  are determined according to GOST 13526-68 on 0.4 to 0.6 mm thick cold-rolled copper strips (GOST 495-79). The varnish is applied according to paragraph 2.9 and baked according to paragraph 2.11.

In determining the specific volumetric electrical resistance measuring and guard electrodes are used in the form of foil fitted to the surface of the specimen.

### 3. Packaging, marking, transporting and storing

3.1. Packaging, marking, transporting and storing of varnish is accomplished according to GOST 9980-62.

# DISTRIBUTION LIST

## DISTRIBUTION DIRECT TO RECIPIENT

<u>ORGANIZATION</u>	<u>MICROFICHE</u>	<u>ORGANIZATION</u>	<u>MICROFICHE</u>
A205 DMATC	1	E053 AF/INAKA	1
A210 DMAAC	2	E017 AF/RDXTR-W	1
B344 DIA/RDS-3C	9	E403 AFSC/INA	1
C043 USAMIIA	1	E404 AEDC	1
C509 BALLISTIC RES LABS	1	E408 AFWL	1
C510 AIR MOBILITY R&D	1	E410 ADTC	1
LAB/FIO			
C513 PICATINNY ARSENAL	1	FTD	
C535 AVIATION SYS COMD	1	CCN	1
C591 FSTC	5	ASD/FTD/NIIS	3
C619 MIA REDSTONE	1	NIA/PHS	1
D008 NISC	1	NIIS	2
H300 USAICE (USAREUR)	1		
P005 DOE	1		
P050 CIA/CRB/ADD/SD	2		
NAVORDSTA (50L)	1		
NASA/NST-44	1		
AFIT/LD	1		
ILL/Code L-389	1		
NSA/1213/TDL	2		

FTD-ID(RS)T-0903-79